

# RO3730™

## Antenna Grade Laminates

RO3730™ laminates have the excellent thermo-mechanical properties and electrical characteristics that antenna designers need. The laminates have a dielectric constant (Dk) of 3.0 and a loss tangent (Df) of 0.0013 measured at 2.5 GHz. These values allow antenna designers to realize substantial gain values while minimizing signal loss. Materials are available with a demonstrated low PIM performance, with values better than -154 dBc (measured using Rogers' internal test method).

RO3730 materials can be fabricated into printed circuit boards using standard PTFE circuit board processing techniques as described in the application note, "Fabrication Guidelines for RO3730 High Frequency Circuit Materials."

Cladding is 1 ounce rolled annealed copper (35 µm thick). RO3730 laminates are manufactured under an ISO 9002 certified quality system.



### Data Sheet

#### FEATURES AND BENEFITS

RO3730 reinforced woven fiber glass with optimized glass and filler loading.

- Improved mechanical rigidity
- Easier handling and processing versus non-reinforced PTFE products
- Lower Dissipation factor

Low PIM

- Reduced signal interference

Low Loss

- Improved antenna gain

Economically priced

- Volume manufacturing

Environmentally friendly

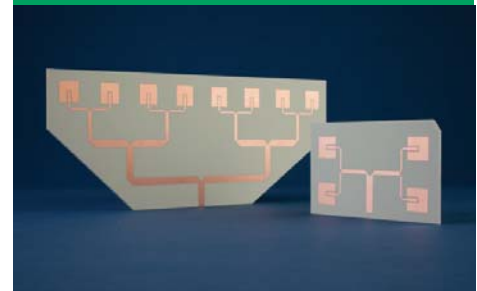
- Lead-free process compatible
- RoHS compliant

Regional finished goods inventories

- Short lead-time / quick inventory turn.
- Efficient supply

#### SOME TYPICAL APPLICATIONS:

- Base Station Antennas
- RFID Antennas
- WLAN Antennas
- Satellite Radio Antennas



| Property   | <sup>[1]</sup> Typical Value | Direction | Units               | Condition                     | Test Method                      |
|--|------------------------------|-----------|---------------------|-------------------------------|----------------------------------|
| Dielectric Constant, $\epsilon_r$<br>Process               | 3.00 ± 0.06                  | Z         |                     | 10 GHz/23°C                   | IPC-TM-2.5.5.5                   |
| <sup>[2]</sup> Dielectric Constant, $\epsilon_r$<br>Design | 2.93                         | Z         |                     | 8 GHz - 40 GHz                | Differential Phase Length Method |
| Dissipation Factor, $\delta$                               | 0.0016<br>0.0013             | Z         |                     | 10 GHz/23°C<br>2.5GHz/23°C    | IPC-TM-650, 2.5.5.5              |
| Volume Resistivity   | 10 <sup>7</sup>              |           | MΩ•cm               | COND A                        | IPC-TM-650, 2.5.17.1             |
| Surface Resistivity  | 10 <sup>7</sup>              |           | MΩ                  | COND A                        | IPC-TM-650, 2.5.17.1             |
| Flexural Strength  | 9 (1.3)<br>8 (1.2)           | X<br>Y    | MPa (kpsi)          |                               | IPC-TM-650, 2.4.4                |
| Dimensional Stability                                      | 0.02<br>0.03                 | X<br>Y    | mm/m<br>(mils/inch) |                               | IPC-TM-650, 2.4.39A              |
| Coefficient of Thermal Expansion                           | 11                           | X         | ppm/°C              |                               | IPC-TM-650, 2.1.41               |
|  | 12                           | Y         |                     |                               |                                  |
|  | 65                           | Z         |                     |                               |                                  |
| PIM  | <-154                        |           | dBc                 |                               |                                  |
| Td   | 500                          |           | °C                  |                               | ASTM D3850                       |
| Thermal Coefficient of $\epsilon_r$ - TcDK                 | -22                          |           | ppm/°C              | -50°C to +150°C               |                                  |
| Thermal Conductivity                                       | 0.45                         |           | W/m/°K              | D24/23                        | IPC-TM-650 2.6.2.1               |
| Moisture Absorption  | 0.04                         |           | %                   | D48/50                        | ASTM D570                        |
| Specific Gravity   | 2.1                          |           | gm/cm <sup>3</sup>  | 23°C                          | ASTM D792                        |
| Copper Peel Strength                                       | 1.8<br>(10.5)                |           | N/mm<br>(pli)       | 10 sec. 550°F<br>Solder Float | IPC-TM-650 2.4.8                 |
| Flammability   | V-0                          |           |                     |                               | UL94                             |
| Lead-Free Process Compatible                               | YES                          |           |                     |                               |                                  |

**NOTES:**

[1] Typical values are a representation of an average value for the population of the property. For specification values contact Rogers Corporation.

[2] The design Dk is an average number from several different tested lots of material and on the most common thickness/s. If more detailed information is required please contact Rogers Corporation or refer to Rogers' technical reports on the Rogers Technology Support Hub at <http://www.rogerscorp.com/acm/technology>.

| Standard Thickness                   | Standard Panel Size                                | Standard Copper Cladding            |
|--------------------------------------|--|-------------------------------------|
| 0.030" (0.762mm)<br>0.060" (1.524mm) | 24"X18" (610mm X 457mm)<br>24"X54" (610mm X 1.37m) | Rolled Copper Foil: 1 oz. (1RD/1RD) |

*For more information about RO3000 Series High Frequency Laminates, scan the QR code below*

The information in this data sheet is intended to assist you in designing with Rogers' circuit material laminates. It is not intended to and does not create any warranties express or implied, including any warranty of merchantability or fitness for a particular purpose or that the results shown on this data sheet will be achieved by a user for a particular purpose. The user should determine the suitability of Rogers' circuit material laminates for each application.

